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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/988,681 | 11/20/2001 | Ukyo Mori | DP-827 US | 9011 |

7590 08/12/2004

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| EXAMINER | |
|---|---|
| DEAN, RAYMOND S | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2684 | 6 |

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/988,681 | MORI, UKYO | |
| | Examiner | Art Unit | |
| | Raymond S Dean | 2684 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1 - 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayes et al. (GB 2330980) in view of Azima et al. (US 6,332,029).

Regarding Claim 1, Hayes teaches an electron device comprising: a main body (Page 2 lines 21 – 22); a display disposed at a prescribed position on the main body for showing information visually (Page 2 line 23); a transparent plate member provided on the surface of the display (Page 2 lines 24 – 28).

Hayes does not specifically teach a driving means having magnets and a voice coil, which is installed at a prescribed position on the plate member for vibrating the plate member in response to an audio signal.

Azima teaches a driving means having magnets and a voice coil, which is installed at a prescribed position on a plate member for vibrating the plate member in response to an audio signal (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 – 50, Column 23 lines 54 – 57, Column 30 lines 16 – 23).

Hayes and Azima both teach a loudspeaker panel thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transducer taught above in Azima in the loudspeaker panel of Hayes for the purpose of creating an effective and compact loudspeaker panel with the capability for wide-band performance of great clarity or intelligibility as taught by Azima.

Regarding Claim 2, Hayes teaches an electron device comprising: a main body having a slender shape as a hand set, which is provided with a microphone near the end of the front surface (Figures 3, 4, 6, Page 3 lines 2 - 3); a display disposed in a prescribed space, which includes the space where a speaker is supposed to be disposed, near the end opposite to the microphone on the main body for showing information visually (Figures 3, 4, 6, Page 3 lines 4 - 10); a transparent plate member provided on the surface of the display (Page 2 lines 24 – 28).

Hayes does not specifically teach a driving means having magnets and a voice coil, which is installed at a prescribed position on the plate member for vibrating the plate member in response to an audio signal.

Azima teaches a driving means having magnets and a voice coil, which is installed at a prescribed position on a plate member for vibrating the plate member in

response to an audio signal (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 – 50, Column 23 lines 54 – 57, Column 30 lines 16 – 23).

Hayes and Azima both teach a loudspeaker panel thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the transducer taught above in Azima in the loudspeaker panel of Hayes for the purpose of creating an effective and compact loudspeaker panel with the capability for wide-band performance of great clarity or intelligibility as taught by Azima.

Regarding Claim 3, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 1. Azima further teaches wherein the driving means includes magnets and a voice coil where an audio signal is inputted, either of which is installed on the plate member (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 – 50, Column 23 lines 54 – 57, Column 30 lines 16 – 23).

Regarding Claim 4, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 2. Azima further teaches wherein the driving means includes magnets and a voice coil where an audio signal is inputted, either of which is installed on the plate member (Figure 1, Figure 9, Column 23 lines 33 – 36, Column 23 lines 46 – 50, Column 23 lines 54 – 57, Column 30 lines 16 – 23).

Regarding Claim 5, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 1. Azima further teaches wherein the driving means are installed at plural places on the plate member (Column 14 lines 6 – 16, there are 24 locations for the transducer, which is the driving means).

Regarding Claim 6, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 2. Azima further teaches wherein the driving means are installed at plural places on the plate member (Column 14 lines 6 – 16, there are 24 locations for the transducer, which is the driving means).

4. Claims 7 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayes et al. (GB 2330980) in view of Azima et al. (US 6,332,029) as applied to Claims 1and 2 above, an further in view of Porrazzo et al. (5,872,855).

Regarding Claims 7, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 1. Azima further teaches the magnets are disposed at places corresponding to both inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Hayes in view of Azima does not teach wherein the voice coil is a planar coil having a shape of a square frame and the magnets are disposed on an opposite spaced surface to the surface where the voice coil is installed.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a square frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped) and the magnets are disposed on an opposite spaced surface to the surface where the voice coil is installed (Column 6 lines 18 – 21, the voice coils are placed on

the surface of the sound driver and the magnet is placed within the surface of the sound driver, which would be an opposite surface).

Hayes in view of Azima and Porrazzo teach the use of voice coils for the production of sound thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils and magnet spacing taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claim 8, Hayes in view of Azima teaches all of the claimed limitations recited in Claim 2. Azima further teaches the magnets are disposed at places corresponding to both inside and outside of the frame of the voice coil (Figure 11a, Column 31 lines 43 – 47, the magnetic system comprises the poles, Figure 11a shows said poles on the inside and outside of the coils (13)).

Hayes in view of Azima does not teach wherein the voice coil is a planar coil having a shape of a quadrilateral frame and the magnets are disposed on an opposite spaced surface to the surface where the voice coil is installed.

Porrazzo teaches wherein the voice coil is a planar coil having a shape of a quadrilateral frame (Column 6 lines 7 – 11, the voice coil is a planar coil, which means that said coil will be in a two dimensional plane, squares, rectangles, and quadrilaterals have two dimensional planes thus said planar coil can be square, rectangular, or quadrilateral shaped) and the magnets are disposed on an opposite spaced surface to the surface where the voice coil is installed (Column 6 lines 18 – 21, the voice coils are

placed on the surface of the sound driver and the magnet is placed within the surface of the sound driver, which would be an opposite surface).

Hayes in view of Azima and Porrazzo teach the use of voice coils for the production of sound thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use planar coils and magnet spacing taught above by Porrazzo for the purpose of producing sound in a plurality of frequency ranges as taught by Porrazzo.

Regarding Claim 9, Hayes in view of Azima and in further view of Porrazzo teaches all of the claimed limitations recited in Claim 7. Porrazzo further teaches wherein a plurality of the planar coils are built up in the direction orthogonal to the surface where the planar coils are installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

Regarding Claim 10, Hayes in view of Azima and in further view of Porrazzo teaches all of the claimed limitations recited in Claim 8. Porrazzo further teaches wherein a plurality of the planar coils are built up in the direction orthogonal to the surface where the planar coils are installed (Figure 2A, Figure 3C, Column 5 lines 31 – 36, the coils are layered in a direction that is orthogonal to the plane of the sound driver surface (106)).

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S Dean whose telephone number is 703-305-8998. The examiner can normally be reached on 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A Maung can be reached on 703-308-7745. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Raymond S. Dean
July 28, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER